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THREAD BLIGHT OF WOODY PLANTS

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Thread blight (*Corticium stevensii* Burt.) is a fungous disease of woody plants. The common name is appropriately descriptive of the disease. The first indications of thread blight may be recognized by dead leaves hanging by threads from the lower portion of the current season's growth of the host plant. Closer examination will reveal many brown, silky threads of the fungus along the stems and on the foliage.

The disease has been recognized in Florida since about 1900 and at present is considered state-wide in its distribution. It has been collected on a great many host plants, both cultivated and in the native forests and is confined almost without exception to the woody perennials. Its occurrence on annuals has been limited to certain vines that climb upon the diseased shrubs.

Thread blight has been found in Florida on pear, pecan, fig, persimmon, citrus, guava, tung and many ornamentals. Many of these hosts are partially or completely defoliated by the fungus and the fruit is attacked. Severe defoliation in midsummer may be followed by a new flush of growth which in turn may become diseased. This process so severely drains reserves in the trees as to prevent the production of a profitable crop during the following season.

The fungus usually is dormant from the approximate time of the first frost until April or May, or until the new twig growth begins to harden. These dates will vary from year to year and also in different parts of the state in the same year, the shorter dormant season occurring in the southern part of the state. The fungus produces sclerotia that persist for several years on the host twigs. They are resistant to unfavorable conditions such as low temperatures and lack of moisture or humidity, and during periods when the host plants are dormant or free of foliage. The ravages of the fungus in the summer time are favored by continued high temperatures, humidity and abundant rainfall. The growth of the fungus in the spring, initiated from the sclerotia, is probably influenced primarily by the occurrence of definite warm temperatures. In a few weeks this new growth involves all of the new growth of the host and kills most of it. The

leaves are shed gradually and the twigs left bare. The fungus forms sclerotia around the terminal and lateral buds and along the internodes, frequently located above the lenticles. It remains in this more or less dormant condition until new foliage is produced during the current season or the following year. In this position the fungus is ideally located to resume its parasitism as soon as the host produces new growth. This is the principal manner of its survival and growth during the year and from year to year.

It produces spores during the summer on the thin superficial hyphal mats that are formed on the surfaces of the leaf blades. The spores are produced most frequently on the lower surface of the leaves and are easily disseminated by air currents, wind and water. These spores germinate under favorable temperature and moisture conditions and initiate infection on the foliage. These spores are thin-walled, small and delicate and consequently do not remain viable for long periods. They are probably of little importance in regard to widespread dissemination of the fungus. The threads and sclerotia are the only known means of survival over the winter, and their association with the disease are diagnostic characters.

SYMPTOMS

The sclerotia are exceedingly irregular in form, color, size and distribution. The immature ones are of a dull white color, soft and cottony. As they mature they change to light brown and finally to cinnamon-brown, becoming solid, compact, hard and often shiny. They are flat or concave on the side in contact with the host, about 1/16 inch thick and up to ¼ inch in length, mound-shaped vertically and oval to oblong. They are arranged irregularly in series along the mycelial strands, apparently varying in number and size directly with the number of strands. Under favorable environmental conditions the sclerotia germinate, producing mycelium which grows rapidly in various directions but primarily toward the branch tip, up leaf petioles and peduncles, adhering closely to the epidermal layer or cortex. The mycelium grows rapidly into multithreaded strands which are usually on the lower surface of the host parts. On the leaf blades these strands spread out more or less fan-shaped and kill the tissue closest to the point of union of the petiole and blade. The leaves are rapidly killed, become brown and shed. In some cases they may continue to hang by the fungous strands for indefinite periods. Leaf blades that are in contact with affected leaves or with twigs may become infected by the fungus growing from diseased to healthy parts. In this way the mycelial strands characteristically hold clusters of dead leaves together.

When only partially killed, leaves are usually completely overgrown by the brown, silky fungous threads. Frequently these threads are so numerous as to appear as a whitish coat. When less dense they can be seen easily by reflected light as a fine network of silky threads.

CONTROL

A combination of spraying with 4-4-50 bordeaux mixture and pruning has given good control of this disease.

The spray schedule inaugurated in the spring just before new growth starts should be very thorough. At that time the plants are dormant and less liable to be injured. This first application if carefully done is frequently sufficient to kill the fungus, but usually some sclerotia survive. This necessitates making a second application after the new growth has become well developed but before the sclerotia show any sign of growth. If any pruning is to be done it should be left until after the time for the sclerotia to develop so that any new growth of the fungus might be mechanically removed. Ordinarily the disease can be eliminated in one season.